

In the Claims:

Please amend the claims as indicated hereafter.

1. (Currently Amended) A network router, comprising:
 - memory;
 - a layer 1 portion having a first communication interface and a second communication interface;
 - a layer 2 portion;
 - a layer 3 portion having a layer 3 protocol stack, said layer 3 protocol stack having a routing table stored in said memory and specifying, for a particular destination, a data path from said layer 3 portion to said layer 2 portion, said layer 3 protocol stack configured to provide a first plurality of data packets destined for the particular destination and a second plurality of data packets destined for the particular destination, said layer 3 protocol stack configured [[and]] to route through said data path each of said first and second plurality of data packets based on said routing table, said layer 3 protocol stack further configured to detect a layer 3 error condition; and switching logic configured to automatically initiate a layer 2 switch for said layer 2 portion of said network router in response to a detection of said error condition by said layer 3 protocol stack such that said layer 2 portion interfaces [[a]] said second plurality of said data packets with said second communication interface in lieu of said first communication interface, wherein said layer 2 switch is transparent to said layer 3 portion, wherein said layer 2 portion is configured to interface at least one of said first plurality of data packets with said first communication interface prior to said layer 2 switch, wherein said first communication interface is configured to transmit said at least one first plurality of data packets to a second router via a first protocol over a first data path through a first network, and wherein said second communication interface is configured

to transmit said second plurality of said data packets to said second router via a second protocol over a second data path through a second network.

2. (Currently Amended) The router of claim 1, wherein said switching logic is further configured to automatically initiate another layer 2 switch, in response to a detection that said error condition is resolved, such that said layer 2 portion interfaces a second plurality of said data packets with said first communication interface in lieu of said second communication interface.
3. (Previously Presented) The router of claim 1, wherein said second protocol is point-to-point protocol (PPP).
4. (Original) The router of claim 1, wherein said first data path comprises a T1 link.
5. (Original) The router of claim 4, wherein said second communication interface comprises a modem.

6. (Currently Amended) A network router, comprising:

memory;

a layer 3 protocol stack configured to provide a first plurality of data packets to be transmitted by said network router to a second router, the layer 3 protocol stack having a routing table stored in said memory and specifying a data path for routing said first plurality of data packets to said second router, the layer 3 protocol stack configured to insert, into each of said first plurality of data packets, route information indicative of said data path based on said routing table, the layer 3 protocol stack further configured to detect a layer 3 error condition;

a first layer 2 protocol stack;

a second layer 2 protocol stack;

a plurality of layer 3 network interfaces configured to receive data packets from said layer 3 protocol stack, wherein said layer 3 protocol stack is configured to provide each of said first plurality of data packets to one of said layer 3 network interfaces; and

layer 2 switching logic configured to receive each of said first plurality of data packets from said one layer 3 network interface, said layer 2 switching logic configured to provide at least one of said first plurality of data packets to said first layer 2 protocol stack such that said at least one of said first plurality of data packets is transmitted via a primary network and a first protocol to said second router, said layer 2 switching logic configured to perform a layer 2 switch in said network router in response to a detection of said error condition by said layer 3 protocol stack such that said layer 2 switching logic provides, in response to said detection, at least one other of said first plurality of data packets to said second layer 2 protocol stack such that said at least one other of said first plurality of data packets is transmitted via a secondary network and a second protocol to said second router, wherein said layer 2 switch is transparent to said layer 3 protocol stack.

7. (Currently Amended) The system router of claim 6, further comprising:

a first communication interface configured to transmit, over said primary network to said second router, each of said first plurality of data packets provided to said first layer 2 protocol stack; and

a second communication interface configured to transmit, over said secondary network to said second router, each of said first plurality of data packets provided to said second layer 2 protocol stack.

8. (Currently Amended) The system router of claim 7, wherein said protocol stacks, said network interfaces, said switching logic, and said communication interfaces are each integrated within a housing unit.

9. (Canceled)

10. (Currently Amended) The router of claim 6, wherein said layer 2 switching logic is configured to provide at least one of said first plurality of data packets to said first layer 2 protocol stack in response to a determination that said error condition has been resolved.

11. (Previously Presented) A method for use in a network router, comprising the steps of:
providing data packets from a layer 3 portion of said network router, said layer 3 portion
including a routing table specifying route information for said data packets;
inserting said route information into each of said data packets;
interfacing, via a layer 2 portion of said network router, a first plurality of said data packets
with a first communication interface of a layer 1 portion of said network router;
communicating said first plurality of said data packets from said first communication
interface over a primary data path to a second router via a first protocol;
detecting, via said layer 3 portion of said network router, a layer 3 error condition
associated with said primary data path;
automatically performing a layer 2 switch in said network router in response to said
detecting step such that said layer 2 portion of said network router interfaces a second plurality of
said data packets with a second communication interface of said layer 1 portion; and
communicating said second plurality of data packets from said second communication
interface over a backup data path to said second router via a second protocol,
wherein said layer 2 switch is transparent to said layer 3 portion.

12. (Previously Presented) The method of claim 11, further comprising the steps of:
automatically performing a second layer 2 switch in response to a detection that said layer
3 error condition has been resolved such that said layer 2 portion interfaces a third plurality of said
data packets with said first communication interface; and
communicating said third plurality of data packets from said first communication interface
over said primary data path to said second router via said first protocol.

13. (Previously Presented) The method of claim 11, wherein said second protocol is point-to-point protocol (PPP).

14. (Original) The method of claim 11, wherein said second communication interface comprises a modem.

15. (Original) The method of claim 14, wherein said primary data path comprises a T1 link.

16. (Currently Amended) A method for use in a network router, comprising the steps of: using a layer 3 protocol stack within said network router to provide a first plurality of data packets, said layer 3 protocol stack including a routing table specifying route information for said first plurality of data packets;

inserting said route information into each of said first plurality of data packets;

transmitting said first plurality of data packets from a first layer 1 communication interface over a primary data path to a second router via a first protocol and from a second layer 1 communication interface over a backup data path to said second router via a second protocol;

transmitting each of said first plurality of data packets to one of a plurality of layer 3 network interfaces within said network router;

detecting, via said layer 3 protocol stack, a layer 3 error condition associated with said primary data path;

transmitting at least one of said first plurality of data packets from said one layer 3 network interface to a first layer 2 protocol stack of a plurality of layer 2 protocol stacks within said network router; and

changing which of said plurality of layer 2 protocol stacks receives said first plurality of data packets based on said detecting step without updating said layer 3 protocol stack based on said detecting step such that at least one of said first plurality of data packets is received by a second layer 2 protocol stack of said plurality of layer 2 protocol stacks within said network router, wherein each of said first plurality of data packets received by said first layer 2 protocol stack is transmitted over said primary data path and each of said first plurality of data packets received by said second layer 2 protocol stack is transmitted over said backup data path.

17. (Currently Amended) The router of claim 1, wherein said layer 3 portion is configured to insert, into each of said first and second plurality of data packets, the same route information based on said routing table.

18. (Previously Presented) The router of claim 1, wherein said second data path is a dedicated path from said network router to said second router.

19. (Currently Amended) A network router, comprising:

memory;

a layer 1 portion having a first communication interface and a second communication interface, wherein said first communication interface is configured to transmit to a second router via a first protocol over a primary data path through a first network, and wherein said second communication interface is configured to transmit to said second router via a second protocol over a backup data path through a second network;

a layer 2 portion;

a layer 3 portion having a layer 3 protocol stack, said layer 3 protocol stack having a routing table stored in said memory and configured to provide a first plurality of data packets destined for a particular destination, said first plurality of data packets including at least a first data packet and a second data packet, said layer 3 protocol stack configured to insert layer 3 route information into a respective header of each of said first plurality of data packets based on said routing table, said layer 3 route information indicative of said primary data path, said layer 3 protocol stack configured to detect a layer 3 error condition associated with said primary data path, wherein said first data packet is transmitted by said first communication interface via said first protocol over said primary data path to said second router; and

switching logic configured to automatically initiate a layer 2 switch in said network router in response to a detection of said error condition by said layer 3 stack such that said layer 2 portion interfaces said second data packet with said second communication interface, wherein said second data packet is transmitted by said second communication interface via said second protocol over said backup data path to said second router, and wherein said layer 2 switch is transparent to said layer 3 portion.

20. (New) The router of claim 1, wherein said layer 3 portion has a first network interface, wherein the layer 2 portion has a first protocol stack and a second protocol stack, wherein said switching logic comprises a switch, wherein said switch is coupled to said first network interface, wherein said first protocol stack has a first port coupled to said first communication interface, wherein said second protocol stack has a second port coupled to said second communication interface, wherein said third protocol stack is configured to transmit each of said first and second plurality of data packets to said first network interface, wherein said switch is configured to receive each of said first and second plurality of data packets from said first network interface, wherein said switch is configured to transmit said first plurality of data packets to said first protocol stack, and wherein said switching logic is configured to update said switch in performing said layer 2 switch such that said second plurality of data packets are transmitted to said second protocol stack in lieu of said first protocol stack after said layer 2 switch.

21. (New) The router of claim 20, wherein said layer 3 portion has a second network interface, wherein said layer 3 protocol stack is configured to transmit a third plurality of data packets to said second network interface, wherein said second network interface is configured to transmit said third plurality of data packets to said first protocol stack, and wherein said first and third plurality of data packets pass through said first port to said first communication interface, and wherein said layer 2 switch is performed without switching a data path of said third plurality of data packets such that at least one of said third plurality of data packets is transmitted through said first port to said first communication interface while said second plurality of data packets are transmitted by the second communication interface to said second router.

22. (New) The router of claim 6, wherein said layer 3 protocol stack is configured to provide a second plurality of data packets, wherein said first layer 2 protocol stack is configured to

receive said second plurality of data packets such that said second plurality of data packets are transmitted via said primary network, and wherein said layer 2 protocol switch is performed without switching a data path for said second plurality of data packets such that at least one of said second plurality of data packets is received by said first layer 2 protocol stack and transmitted via said primary network while said at least one other of said first plurality of data packets is received by said second layer 2 protocol stack and transmitted via said secondary network.

23. (New) The router of claim 22, wherein said layer 2 switching logic comprises a switch configured to receive said first plurality of data packets from said one of said layer 3 network interfaces and to selectively switch said first plurality of data packets between said first and second layer 2 protocol stacks, and wherein said second plurality of data packets bypasses said switch.

24. (New) The method of claim 16, further comprising the steps of:
using said layer 3 protocol stack to provide a second plurality of data packets;
transmitting each of said second plurality of data packets to said first layer 2 protocol stack, said first layer 2 protocol stack having a port coupled to a first communication interface;
passing through said port each of said first and second plurality of data packets received by said first layer 2 protocol stack,
wherein said changing step is performed without changing which of said layer 2 protocol stacks receives said second plurality of data packets such that at least one of said second plurality of data packets is received by said first layer 2 protocol stack and passes through said port while at least one of said first plurality of data packet is transmitted via said second layer 2 protocol stack over said backup data path.

25. (New) The router of claim 19, wherein said primary data path passes through a network, wherein said layer 3 protocol stack is configured to provide a second plurality of data packets, wherein said layer 2 portion is configured to interface said second plurality of data packets with said first communication interface such that said second plurality of data packets is transmitted through said network, and wherein said layer 2 switch is performed without said layer 2 portion switching a data path for said second plurality of data packets such that at least one of said second plurality of data packets is interfaced with said first communication interface and transmitted through said network while said second data packet is interfaced with said second communication interface and transmitted over said backup data path.

26. (New) The router of claim 25, wherein said switching logic comprises a switch configured to receive said first plurality of data packets and to selectively switch said first plurality of data packets between first and second layer 2 protocol stacks of said layer 2 portion, wherein said first layer 2 protocol stack is configured to receive said second plurality of data packets, and wherein said second plurality of data packets bypasses said switch.